

***Abstract***

Three trace electromechanical circuits and methods of using same. A circuit includes first and second electrically conductive elements with a nanotube ribbon (or other electromechanical elements) disposed therebetween. An insulative layer is disposed on one of the first and second conductive elements. The nanotube ribbon is movable toward at least one of the first and second electrically conductive elements in response to electrical stimulus applied to at least one of the first and second electrically conductive elements and the nanotube ribbon. Such circuits may be formed into arrays of cells. One of the conductive elements may be used to create an attractive force to cause the nanotube ribbon to contact a conductive element, and the other of the conductive elements may be used to create an attractive force to pull the nanotube ribbon from contact with the contacted conductive element. The electrically conductive traces may be aligned or unaligned with one another.